



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,858	12/04/2001	Keith D. Allen	R-690	2822

7590 04/22/2004  
DELTAGEN, INC.  
740 Bay Road  
Redwood City, CA 94063

EXAMINER
----------

QIAN, CELINE X

ART UNIT	PAPER NUMBER
----------	--------------

1636

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

8/14

**Office Action Summary****Application No.**

10/005,858

**Applicant(s)**

ALLEN, KEITH D.

**Examiner**

Celine X Qian

**Art Unit**

1636

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 22-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 1636

### **DETAILED ACTION**

Claims 22-27 are pending in the application.

This Office Action is in response to the amendment filed on 3/8/04.

#### ***Response to Amendment***

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claims 22-27 are rejected under 35 U.S.C. 112 1<sup>st</sup> paragraph for reasons discussed below.

#### ***New Grounds of Rejection***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 22-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue." These factors include, but are not limited to: (a) the nature of the invention; (b) the breadth of the claims; (c) the state of the prior art; (d) the amount of direction provided by the inventor; (e) the existence of working examples; (f) the relative skill of those in the art; (g) whether the quantity of experimentation needed to

Art Unit: 1636

make or use the invention based on the content of the disclosure is "undue"; and (h) the level of predictability in the art (MPEP 2164.01 (a)).

Nature of the Invention:

Claims 22-27 are drawn a transgenic mouse comprising a disruption in a NTTP1 gene, wherein the disruption is homozygous, the mouse does not produce functional NTTP1 protein, and exhibits phenotype for an anti-depressive behavior. The claims are further drawn to a cell or a tissue isolated from said transgenic mouse, and a method of producing said transgenic mouse.

Breadth of claims and amount of guidance in the specification and working Examples:

In the instant case, claims 22-27 encompass a transgenic mouse that exhibits anti-depressive behavior. The specification does not provide an enabling disclosure for how to use the transgenic mouse as claimed. The specification discloses a NTTP1 transgenic knockout mouse, wherein the homozygous knockout mouse exhibits phenotype of anti-depressive behavior characterized by a decrease in time spent immobile while tail suspended. The specification does not provide specific teaching on how to use these mice with the disclosed phenotype. The specification prophetically teaches that the transgenic mouse can be used to screen drugs or as models for diseases, or screening agents that modulates a phenotype of said mouse. However, the specification fails to teach what type of diseases are the disclosed phenotypes related to. The specification also fails to teach how to use the agent that modulates the phenotype associated with NTTP1 gene disruption. As such, one skilled in the art would not know how to use the transgenic mouse with phenotype of anti-depressive behavior as a disease model or screen drugs for a specific disease. Moreover, the specification fails to teach how to use a cell or tissue isolated from the transgenic mouse. Therefore, the teaching of the specification is limited.

Art Unit: 1636

The state of art and the predictability in the art

The state of art at the time of filing considers generating null mutation of a specific gene in mice and phenotypic behavior resulted from the mutation is unpredictable. Crawley et al. (1997, Psychopharmacology, Vol 132, pages 107-124) teaches that the phenotype of a mutant mouse is not only the result of the targeted gene, but it also reflects interactions with background gene, and other unknown mutations in the genetic background (see pages 107 last paragraph through page 108 1<sup>st</sup> paragraph). The article further teaches that not all isogenic backgrounds are appropriate for a given study, since the behavioral characteristics of certain isogenic strains could overshadow the effects of the targeted mutations (see page 108, 1<sup>st</sup> col., lines 10-14). Furthermore, it points out that no single behavior commonly measured in the open field appears to reflect only anxiety or emotional reactivity. Moreover, two strains commonly used in ES cell and knockout generation C57BL/6 and various substrains of 129 are unusual on many standard behavioral paradigms. The unique traits of 129 and C57BL/6 mice are examples of a widespread problem for interpretation of behavioral phenotypes of null mutations, given the genetic diversity that exists amongst the dozens of other commonly available inbred mouse strains (see page 108, 2<sup>nd</sup> paragraph). Therefore, whether the phenotype of anti-depressive behavior is result from null mutation alone is unpredictable.

The state of art at the time of the filing is silent on a transgenic mouse whose genome comprises a disruption in an endogenous NTTP1 gene, wherein the disruption is homozygous, said mouse lacks production of the NTTP1 protein, and said mouse exhibits phenotypic feature of anti-depressive behavior, as compared to a wild type mouse. The art does not provide any teaching regarding the relationship between NTTP1 function and anti-depressive behavior. The

Art Unit: 1636

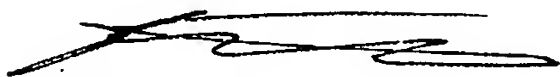
art is also silent on what type of disease is related to NTTP1 dysfunction that would result in the disclosed phenotype. As such, whether transgenic mouse exhibits phenotype of anti-depressive behavior can be used for a disease model or screening for drugs is unpredictable. One skilled in the art would have to engage in undue experimentation to use the invention as claimed.

Therefore, the claimed invention is not enabled by the instant specification.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Celine X Qian whose telephone number is 571-272-0777. The examiner can normally be reached on 9:30-6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Remy Yucel Ph.D. can be reached on 571-272-0781. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Celine Qian, Ph.D.